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ABSTRACT

Drawing from a comparison of Danish and American kindergarten students, a review of theories of child activity, and action research, this report outlines several principles for pedagogical practice among 5- and 6-year-old children. The report first focuses on the crosscultural, ethnographic, and comparative study of Danish and American kindergartens, including information on the study's background, the research problem and basis, educational styles in the two classrooms studied, activities initiated by teachers and children, and mediating factors. The next sections profile Danish and American kindergarten students' psychosocial development, covering their learning motivation, social competence, and ability to work cooperatively. Next, theories underpinning action research carried out by three early childhood education teachers, followed by a description of several play activities developed by the teachers to overcome the deficiencies of American teacher-controlled, "academic," direction instruction and Danish child-controlled, "developmentally appropriate" practice. These activities include frame play, a play activity in which teachers and students plan the content, setting, framework, rules, and possible plots and actions together; the use of symbols and models; and the action model, in which children plan, carry out, and control activities independently. Finally, the educational principles are presented and recommendations are made that kindergarten activities should fall between pure play and formal learning activities. (AC)

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ED 369 478

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A CROSSCULTURAL, ETHNOGRAPHICAL AND COMPARATIVE STUDY OF ONE DANISH AND ONE AMERICAN KINDERGARTEN PLUS THE PSYCHOLOGICAL DEVELOPMENT OF THESE DANISH AND AMERICAN 6 YEAR OLD CHILDREN

SUMMARY

On the basis of a cross-cultural, comparative and ethnological study of one Danish and one American kindergarten class in school including an analyse of these children's psychological development and in the light of the cultural-historical theory of activity and through an action research I outline some educational principles for the 5-6 year olds.

BACKGROUND AND PROBLEMS

In Denmark children normally start in kindergarten class in elementary school at the age of 6 and subsequently in first grade at 7. But a law from 1985 has made it possible to start one year earlier. In kindergarten class children usually are involved in "play and other stimulating activities", but the new law has opened up for real instruction. During the last few years parents, politicians, educators and teachers show a particular interest in the 6 year old child and his or her development. It has been pointed out, that because of the 5 year old child's curiosity and pleasure for learning, the child needs a systematic and earlier start of school. But also because of international practice - particular the American - and demand from the European Common Market we see a reise interest in an academic education of the 6 year olds.

On this background we can expect an additional earlier star in school in the space of few years. Probably the child will be involved in activities which go beyond the capacity and with that cross the zone of proximal development (Vygotsky, L.S. 1962 & 1978:86). In that case the activity will not contribute the development, and at worst the child will get stress, feeling of guilt, dissatisfaction, dependence and doubtfulness (Elkind, David 1986; Sapagova, E.E. 1986).

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THE BASIS OF THE RESEARCH

The two selected schools can be compared concerning the parents social economic stratum (higher middelclass), and too both schools have a high educational quality but differ from one another concerning the educational aim and style. In the American classroom the "3 R's" (reading, writing, arithmetic) is an integrated and dominant part of the curriculum, whereas play dominates in the Danish classroom.

Starting from cross-cultural research results (Rogoff, B. 1981; Cole, M. et al. 1971) concerning connexion between culture and the psychological development plus new research about the impac of schooling (Morison 1991), I hypothesis a difference between the two groups of Danish and American 6 year olds.

THE EDUCATIONAL STYLE IN THE TWO CLASSROOMS

By means of general ethnological research methods (for instance Atkinson, P & Hammersley, M 1983; Bronfenbrenner, U 1977) of analysis and interpretation and using the cultural-historical theory about the mediating of the culture through artifacts (Vygotsky 1978) plus a more elaborated model (Engstrom, Y. 1986, 1987, 1990) in the light of an ecological perspective, I analyse and interpret the educational style and everyday life of the two classrooms.

For reasons of space a qualitative description of the educational life in the two classroom will not be brought, but summing up:

The Danish kindergarten class is characterized through an active dialectics between the teacher's and the children's initiatives and ideas. On the one hand the teacher defines some topics and activities, for example a subject about birds. First the children observe birds in the nature and then she makes room and possibility for a row of self-organized creative-artistic activities and expression through which they relate to the subject. On the other hand the teacher gives the children a relative free scope. That means during a number of periods the children are able to define their own activities, and there is a tradition for long play sequences without interruptions.

Summing up the Danish classroom is characterized through a steady setting and open possibilities; independent initiatives and own choises; activities where the children have to organize and to handle conflicts; the teacher comprehends the child as a self-acting individual. Expressed with a root metaphor (Ortner, S. 1973) the teacher acts as a midwife helping the children to experiment in the role as an artist and a philosopher.

The life in the American kindergarten is very well- organized. The teacher brings the children into goal directed situations where she effective and regular organizes and controls the children in agreement with a pre-arranged plan. The daily round is organized on the basis of a row of subjects the teacher has decided, for example: dinosaurus, volcanos, whales and penguins, plus space travel. At the daily cirkeltime the teacher presents

5 to 6 new tasks, which the children are doing individual, they enter their result in a work sheet, which the teacher final evaluates.

The educational practice can be characterized as individual, academic and verbal. All day long the children are involved in learning activities, and the teacher comprehends the child as a successful child. The teacher has high expectations, adresses all activities towards exact objects and aims, demands matter-of-factness and acts in a businesslike manner, demands not loosing the time and a correct behavior.

With a metaphor I characterize the interaction between teacher and children as the relation between the conductor and the orchestral player. As conductor the teacher estimates the tempo, arranges the interaction and decides when the single musician are allowed to give a solo. Most of the children act as learn eager students. In continuation of this I compare the way of living in the kindergarten class with the life style in an administration department in a big concern where all leading persons in a well disciplined manner carry out the necessary tasks. For that reson I characterize the children's way of acting like buissness kids on job.

Besides this qualitative analysis I carry through a quantitative analysis of the entity data material concerning the Danish and American educational practice. This analyse confirm my conclusion concerning the USA kinergarten's teacher controled and intellectual dominatet practice, - and the Danish kindergarten's more children centred practice with weight on mutual relations and emotional dimensions.

Activities on the teacher's and on the children's initiative

An analyse of 233 sequences from the American classroom, and 206 sequences from the Danish classroom shows some interesting differences. In the American classroom 77 % of the activities are dominanted of the teacher's initiative. Here the teacher places herself as a centre of strengh from which the organnized initiatives are sent out. Only 8 % of the activities are implemented of the children. Probably this teacher power of definition result in quite a number (11 %) of activities where the children resist the teacher's initiative. Opposite the Danish classroom. Here approximately half of the activities are on the children's initiative and 36 % are implemented of the teacher.

	USA	Denmark
Activities on the teacher's initiative	77	36.4
Activities on children's initiative	8	53.8
The teacher gives free options	0	3.8
The teacher absorbs the children's initiatives	2	2.4
Shared activity	0	3.3
The children's rupture and rebellion	11	0
The teacher refuse the children	2.5	0

The mediating factors

By means of Vygotsky's theory of mediation and Engstrom's more advanced model I analyse the educational culture in the two classroom. Expressed in a quantitative way:

	Symbols	Tools	People
U.S.A.	70 %	14 %	16 %
Denmark	33 %	29 %	38 %

Referring to D.B. Elkonin (1977) the child's interaction and activities with symbols particularly develops the child's cognition, and the interaction with other people develops new motives and emotions. From this point of view the American classroom appears "intellectual" and the Danish classroom more "social-emotional". An hypothesis I investigate through a describing of the children's development.

THE CHILDREN'S PSYCHOLOGICAL DEVELOPMENT

Concerning the relation between the culture, the education, the children's activity and the psychological development I find an evident difference between the Danish and American children. I carried through two kinds of developmental descriptions. One analyse of the development of the children's learn motivation, and one analyse of the children's social competence.

The learn motivation

An approch for to describe the child's growing consciousness of his own actions, that means growing self-conceit, could be a describtion of the change and development of the motives for his own activity.

According to Leontjev's theory of learning motivation (1978 & 1981) and some Scandinavian researchers (Enerstvedt, R. Th. 1988; Pramling, I 1983 & 1987) I establish some criteria for to describe the level of the child's consciousness of his own activity and learning, that means the learn motivation. Through observations and especially interviews with all the children about being a student in the school, I organize the data material on four levels. Through this I encircle the development of the learn motivation by 17 American and 15 Danish children.

1. Play motivation. Here motivation for learning is integrated into the learn proces, and the consciousness of own learning is rather diffuse. For example a child expresses: "I like to do math...it is fun to learn new things" (Paige 5.7).

2. Play- and learn motivation or "learning is to do something". The children have consciousness of being involved in a learn process. They know they are learning when they are doing something, but a little uncertain of what they are learning. For example: "I learn, when I make things in the classroom, that's the way" (Lisa 5.5).

3. Simpel learn motivation - or "learning is to get knowledge". They are conscious of getting new informations through solving tasks. For example: "To learn means you know what you think....To learn is to work with the stuf, and then you get new knowlege about things" (Jason 5.8).

4. Real learn motivation - or "learning is to understand". The children see learning as a process through which they will understand and realize something; learning as "access for" being able to something. That means a motivation which goes beyond the current situation. "You learn when you get smarter.. when you go into 2. grades you know a lot more... and after colleges you know so much, then you are ready for a job" (Fletcher 6.5).

In the middle af the school year 64 % of the American children have developed a learn motivation (sum of simpel- and real learn motivation) opposite only 26 % of the Danish children.

in %	American children	Danish children
Play motivation	5.8	6.3
Play and learn motivation - "learning is to do"	29.4	66.6
Simpel learn motivation - "learning is to know"	47.0	20.0
Real learn motivation - "learning is to understand"	17.6	6.6

The devlopment of social competence

I define the 6 year old child as social competent, when he (among other things) is able to:

Establish contact to other people

Work out relations to other people concerning establishment of interaction and communication

Identify himself with other people's thoughts, feelings, opinions and actions

Express his own thoughts, feelings ect. both in occasion with harmony and conflicts

Understand the other people as subjects and to see oneself with the other's eyes, "taking the role of the other" (Mead, G.H. 1934)

Act as a menber of a group, that means acting on the basis of common values and actions towards common goals.

For to discribe the social development I make room for lots of play on the children's own initiative, I implement a row of group based activities in both the Danish and American classroom with special reference to describe the childrens ability to co-operate, to solve common problems and to establish an activity with common goal and contents.

Below I bring a passage from a Danish and an American group of children doing a group painting on the basis of the fairytale "The Tinderbox" of Hans Christian Andersen:

<u>Six American children paint The Tinderbox</u>
As soon as I finished the fairytale Ethan declare: "I know what to paint", to which I maintain: "Yes that ok, but I

want you to speek together; you need to do it jointly".

The children refuse to commit themselves. Daniel and Jeff are siting at the one end of the paper, Taylar and Rachtel in the middle and Ethan and Blaze at the other end.

Daniel says: "I wish to paint the soldier". I support the idea: "Hey that is great, but I think the soldier have to do something together with the witch or somebody else". From the other end Daniel presents an idea, but he does not receive respond. Now the boys two by two start to speak together.

Ethan tells Blaze he will paint "jailbars", which Blaze accepts. They speak about being in prison and start painting while they tell each other about their paintings. Ethan says: "This is a hard jail, you can't escape", and for to underline this he once again daubs the jailbars.

Now Jeff og Daniel speeks together about what to paint. They agree on painting the soldier. They arrange how to paint and where to put the soldier. They paint the soldier as tall as the paper. Daniel starts painting from above while he expresses: "I am doing the hat". "Oh ! that's great", Jeff replies. "I am doing the boots". For a while the two boys are working on the same figure. They talk to one another and now and then they put forward a good advice: "OK, make a little space, that's enough Jeff".

Until now Ratchel and Taylar are peeping without taking initiatives. I ask Taylar to involve herself: "What would you like to paint ?" She does not reply, but smiles at me, and I keep siting by her and Rachel. Shortly after Taylar says: "I will paint the dog", whereupon she starts painting a very small orange dog, which she places close to Jeff's and Daniel's tall soldier. She avoids speaking with the two boys, and they don't notice her. She finishs her dog, stands up asking me: "I have done the dog, what next".

Six Danish children paint The Tinderbox

At the end of the tale I say: "Now you have to agree on a plan. What would you like to paint jointly" ?

At once Casper tells Martin: "We make the dogs". "No ! we want to paint the those three dogs", Mie, Stine and Caroline speak all at once. But Casper reiterates: "We will do it too, we make the dogs", and Casper continues: "I will paint the dog with copper". The girls listen at the boy's statement, but insist on their claims. "I will make all the dogs", Stine says, and Mie supplements: "I wanna do the dogs too".

Casper is not persuaded, for which reason he repeats: "I produces that one of copper", to which Ida retorts: "We make the three dogs".

Now the situation changes. Martin listens to the girl's powerful statements whereupon he leaves hes own wish: "Then I will paint the soldiers". "The soldiers" ? Casper asks looking at him inquiringly, "you mean the soldier". "Yes, the soldier", Martin confirms.

This concession results in a softening of Mie's demand for painting the dogs: "Then I will paint the tree, the tree and the witch".

Martin underlines his modification by saying: "I have an idea of how to make the soldier".

Under the excited discussion Ida has not express herself, but now where it is more peaceful she also modify he wish: "I should like to do the houses in the town".

Now I join in the children's planning: "It sounds good, do you know where to paint the various motives" ? immediately Casper explains: "Me and Martin paint over there", after which Mie adds: "We will make it here" pointing at a spot in front of herself. But this is not in agreement with Casper, he proposes: "No ! We shall not only paint here and there ". "I go along with you", Caroline exclaims, "the tree have to be right here, and the houses behind"..... and the children carry on planing.

Above short sequences shows, that on the whole the contact and communication between the American children are narrowed down to interactions between only two persons. The children do not turn, listen or communicate with each other across the three teams. Corresponding the finished picture consists in a roe af single motives. Contrary to this the Danish children generate a co-operative activity. The individual persons listen to each other, discuss and quarrel with one another. And not only two by two. The children familiarize themself concerning the whole and look at their activities in this common perspective. They coordinate their individual wishes and turn towards a common object.

In continuation of this my analyse of the entity data material, including a quantitative analyse of 6 Danish and 6 American children, shows, that the social competence is much more developed among the Danish children compared with the American group.

CONCLUSIONS

The comparative study shows, that the American teacher controled 'academic' and 'Direct Instruction Model' are able to develop the learn motivation in the age of 6 plus helping the children to read, write and do math. On the other hand they are very individual centred and have difficulties with doing joint activities.

Opposite the Danish more children controled 'Developmentally Appropriate Practice' develops the children's social competence very well, but perhaps neglect the development of self-conceit (consciousness of own activity), that means the learn motive.

A more complete review of the educational practice in the two classrooms shows, that neither the American teacher controled "academic" practice nor the Danish children controled practice are quite adequate. For that reason I agree with the requirement for a new paradigm inside early childhood education (Elkind, D 1988).

ACTION RESEARCH AND THEORETICAL BASIS

Through an action research I and two preschool teachers tried to defeat above mentioned contradiction through developing and implementing new forms of activities into practice (Brostrom, S 1989).

The theoretical framework is based on the central concept of the cultural-historical theory of activity:

Through the child's own activity he appropriates the culture and with that develops himself (Leontjew 1978 & 1981). The interiorization is a transition that results in processes external in form, with external material objects, being transformed into processes that takes place on the mental plane, on the plane of consciousness (Leontjev 1978:58).

The development of higher psychological functions can be illuminated by means of the cultural-historical theory about the mediation of the culture through tools and artifacts produced by man (Vygotsky 1978:57). The source of the mediation is not only material objects, artifacts, tools, ect. According to Vygotsky (1978:54), Leontjev (1978:59), Elkonin (1971) and Kozulin (1990:114) the culture mediates through the children's interaction with material tools, a system of symbols and with other people.

The activity will only have a developing character when the child experiences the activity as 'meaningful' (Leontjev) or when it gives the child a 'personal experience' (Aidarova 1982). According to Leontjev meaningsfulnes is present when the child's motive is concordant with the object or goal of the action (Leontjew 1981:203-221). A criterion other research workers name "involvement" (Lavers 1991) and "flow" (Csikszentmihaily, M 1975). The children must have an understanding of the reason for a particular action.

Not any meaningsful activity develops the child. Especially activities in 'the zone of proximal development' (Vygotsky 1978:86) - that means activities in which the child under adult guidance or in collaboration with more capable peers raises his actions on a more advanced level - will start new processes of development. Often this kind of activity is dramatic and radical for the future life of the individual, it is a turning point, a revelation - named 'learning by expanding' (Engstrom 1987).

According to the child's age and development one form of activity has more importance than others. According to Leontjew "we call leading activity that in connection with whose development the most important changes take place in the child's psyche and within which psychic process develop that pave the way for the child's transition to a new, higher level of development" (Leontjev 1981: 369).

And for the 5-6 year olds play constitutes the leading activity. Because of its mediating function and its potential for creating a zone of proximal development, play develops

new structure in the psyche. From a psychological angle the most important meaning of play is its influence on development of motives and needs - particularly development of the learning motive (Elkonin 1980).

On the basis of Davydov's theory of theoretical thinking (1977) and Aidarova's (1982) and Venger's (1985) educational practice we experimented with this particularly use of symbols and models.

Furthermore on basis on Elkonin (1980), Leontjev (1981) and Vygotsky (1978) we developed a new form of play which is placed between the role play and learning activity: Frame-play (Brostrom 1992).

FRAME-PLAY

According to Vygotsky "the play create the zone of proximal development of the child. In play the child is always abowe his usual everyday bahavior, in play he is as if head-high above himself....in play the child tries as if to accomplish above the level of his ordinary behavior" (Vygotsky 1962:74).

For reasons of space I will not expound the culture-historical theory of play. But in short role play develops new motives. Play results in a movement from unconscious motive to more concious motive, and in the end learn motivation develops (Elkonin, D.B. 1980).

Because of the 6 year olds experienceses with role play (at least in Denmark) children usually are ready for a more advanced form of play: Frame-play.

Unlike role-play frame-play is a play activity in which the children and the teacher plan together. They decide contents, settings and frames of the game, - hence the name. They discuss the different roles, the rules within the roles, some possible plots and actions. The decisions the children make are formulated verbally but also in creative drawings and paintings, which serve as models. In accordance with Davydov (1989) and Ajdarova (1982) these models help to develop a new self-esteem and consciousness of the children's own activity as well as incipient reflective thought. After this planning the play is carried out.

The frame-play thus contains several elements that have been decided on beforehand among the children and the adults. Because there is a certain interval of time between the decision of play and carrying out the play, the roles, rules and the actions are prepared thoroughly. Often the children produce a lot of acessories for the game. For instance, for a game involving ships the children may create an engine, a bridge, a wheel, and an anchor in addition to aprons, and money to go shopping at the store and restaurant. In this way, the frame-play is more organized and more purposeful than the role-play. According to Leontjev, the play motive in frame-plays is different from the motive in role play. In role play the motive lies in the play itself. In frame-play the motive is consequently shifted more and more to the result of play activity.

In another work i have described a frame-play in details (Brostrom, S 1992), here I only will bring a very short

sequence and too point out some principles of frame-play.

At the hospital

Parallel to the activities generated from from the fire station, we see a corresponding activity in the hospital. The house is humming of activity. Stine, a girl at five, imagines she has fallen and hurt herself. "Help I have broken my leg", she cries, while she simultaneously, she smiles with joy. A teacher calls an ambulance. Jesper and Mads appear as ambulance drivers. They open the door of the ambulance, Jesper climbs on to the chairs and gets the mattress and with great precision and skill he pulls it out. Very carefully they lift up Stine and place her on the stretcher. With the stretcher between them they bring her to the casualty, where they place her on the examination couch. Jesper, the driver, stays observe the doctor and the two nurses, who now examine Stine. The nurse, Gitte, asks Stine about her fall.

Gitte: What's the matter with you ?
Stine: I'm sick
Gitte: You have to sit in the waiting room. Where have you hurt yourself ?
Stine: I have broken my leg
Gitte I will give you a bandage, or put your leg in a cast

The doctor and the two nurses search for the tools. Their bodies express concentration and involvement. They are very absorbed in using the tools (the plaster, the syringe and the gauze bandage). At this point the objects are much more important to the nurses than their contact with the patient. But Stine does not miss the communication, she lolled at the couch, looking as if she enjoys the treatment. At the same time the nurses speaks about the tools.

Does this stick correct ?
Certainly
Lot of people are waiting outside
You have water in this one ? Shall I fill up ?
No.
I would like to apply a plaster
Where are the small plasters ?
Well, where are they ?

After a while Stine is wraped up in gauze bandage, and Jesper the driver helps her to enter the sick room, where three girls at once include her in their fellowship. The four patients are on mattresses with pillows and sleeping quilts speaking together:

Let us say we have been friends for a long time.
Indeed, we four have been friends.
Four children who have been hurt.
Four children who have been good friends and who have been playing together.

Under this talk the girls snuggle down in the sleeping quilts and lie close together. Their body language shows their really feel comfortable and enjoy themselves. They start talking about the time they went camping with the preschool,

and for a while they drop the role as patients.

About ten minutes the four girls return to the play world through the appearance of Sofie as nursing aide, who interrupts their coziness.

Sofie:	Would you like something to drink ?
Maja:	Yes please.
Sofie:	(Sofie fills up a glass with juice and drops a little). Oh shit.
Line:	I would like something too.
Sofie:	It's empty. I go and get some more, and food too. (Sofie returns with juice, fruit and some crackers). More juice and clean mugs ?
Stine:	Why do yoy bring me food, I should not have anything. I would like to read in a book.
Maja:	Can I put my mug over there ?
Line:	I need more food. (And with this remark Maja and the fourth girl cry out): More food. I have not finished
Sofi:	It's O.K. but it won't be the same, we miss fruits.

Back to the hospital there is still lot of activity. A teacher and two children enter the waiting room. The teacher groans that she was overcome by smoke and about to faint. Mette, the doctor gets busy. She measures the blood pressure and raises her arm. The teacher asks: "And afterwards, what is then going to happen" ? The doctor does not reply, but turns to the two nurses. But the teacher carries on: "I feel sick, I have a asphyxiation". One of the nurses catches this remark, she fetches a pail for her to vomit into. The teacher acts real sick, she coughes and vomiting and coughing again. The nurses help the teatcher to the X-ray machine. While the nurses works Camila, age five, enter with a big smile: "Look at me, I'm cleaning". She imagines the role and identifies herself with the role. She wrings the water of teh mop and washes the floor in the sick room. She <u>is</u> cleaner.

Here I will not analyse this frame-play, but only point out some characteristics of frame-play:

The child's motive is in accordance with the object, consequently the activity is meaningsful.

The children are engaged in the activities and they express genuine feelings, that means the motives have character of "really effective motives".

The children understan the whole of the play, and they are able to take in the connections between the single play actions.

The contents and elaboration of the play challenge the children, but do not exceed the zone of proximal development.

Because of these qualities, the frame-play "Quick Response" has the potential to contribute to the children psychological development. A frame-play will have this stimulating function assuming the following criteria are met:

1. The theme of the frame-play has to be formulated on basis

of the children's interests and motives, for example in extension of an earlier project work or a joint excursion.

2. In order to build up the common frame and to play on basis on the theme, the children must have insight in and experiences in connection with the subject of the play. The very best foundation is the children's own psysical experience. For example, through an excursion to the hospital, the harbour or the airport where the children have an opportunity to study the relations between the acting people. Natural a frame-play can be established on the basis of a story or a movie, but six-year-old children prefer the first-hand experience.

3. In connection with the arrangement of the frame-play the teacher are responsible for encouraging and supporting the children and for promoting a good atmosphere.

4. The children have to express the frame of the play themselves. The teachers should support and guide, but they have have to be very gentle in the way they make suggestions and introduce play-scenarios and ideasthe frame of the playactivity.

5. In order to inspire the children to play, the teacher has to take an activ part in the play through a genuine involvement. The teacher has to be sensitive about the children's response, and to find the balance between inspiring the children and drowing the children with ideas, which will impede the children's own initiatives. The teacher's role in play are to support, enrich and expand the play - but without exceeding the zone of proximal development.

On these premisses, the organized frame-play has the potential to contribute to the develop of qualitatively new structures in the child's psyche.

MODELS AND MODELLING

Another important educational principle in the developmental-research on 6 year old children is the use of symbols and models.

At the age of 6 the general use of symbols is relatively highly developed. The children are capable of representing absent objects and actions by symbols and signs. They use symbols in language, play, dramatization and also painting and drawing. Their manner of expression and realization is figurative, it contains at the same time model thinking. Through play the child reflects typical and essential things from life of adults and society in general. In a way children's play is a visual model of the relationships between people. In the children's "school play" for instance the teacher is rather hard. The role need not be an exact picture of a specific adult, but in the role the children have generalized and abstracted typical and essential aspects: The adult has control.

We organize the environment to help the children master different types of models. The most simple models are visual models, that means a model that conforms to objects and actions in real life. Other models reflect non-visual matters and are more abstract. For example the children draw a heart

to symbolize love.

Starting with such well-known activities in the developmental-research we introduce the children to a goal-directed work with models. Mastering this kind of visual models form the basis for to use more advanced models.

Accordance to L. Venger (1985) the children's preparation of a model, that means the link between reality and the psychological reflection, is called a model-process. The appropriation of the model and the model-proces result in qualitative new structures in the psyche.

The model concept

I use the concept model and symbol in that sense, that something represents objects or actions from real life. V.A. Sjtoff has defined the model concept more explicitely: "A model can be understood as a system you imagine in your mind or realized in material, and as it reflects the object of the research, it is able to represent it so that the study of the model will bring us new information about the object" (Davydow 1989 s. 182).

The starting point for creating a model is to separate its elements and the relationship between them. A model is an abstraction in which the essential relationship between the elements of the object are fixed in a visual way.

In the developmental research we experimented with different types of models, but particularly those L. Ajdorova (1986) characterizes as the object model and action model.

The object model

The function of the object model is to preserve the qualities and the core children find in an object or phenomenon by examining it experimentally. Mastering, investigating what lies behind the outside appearance of the object, exposing the core and the phenomenons regularity, presuppose an organized educational environment, where the children can experience the fundamental principles of the object. In accordance with Ajdarova "the model works as a means of making generalizations of the qualities discovered".

A week in the forest

In the pre-school it is a tradition to live in the forest for a week in September. The aims are to help the children to appropriate insight into forest life, to understand the rhythm of nature and the reson for the changes in the forest in the fall. Furthermore to understand, respect for and protecting nature and wild life and to experience the feelings of joy and delight at the beauty of the forest through manifold sense impressions. And last but not least to give children and adults opportunity of a communal experience.

The children and the adults stay in the forest all day playing, fishing, eating, building huts, and investigating the surrounding environment. The week after they express their experiences of nature through drawing, painting, drama and discussion. During conversations the teacher makes sure

that the children talk about what is alive and what is dead, and what kind of life they found in the forest. Among others the children reel off birds, fish, butterflies and insects. A child af five adds "stones". "Are stones alive" ? the teacher asks. The children discuss the question and Peter thinks they are alive because "you can find both little stones and big stones", but shortly after they agree that stones are dead things. From this starting point this the teacher asks how you can find out if something is alive or dead. The children discuss this difficult question and six year old Marie replies: "Living things grow", to which Morten, also adds: "All living things move". This understanding is relatively close to the essence of nature and therefore the teacher asks the children to demonstrate how the forest is alive. The children solve this task between themselves quickly and easily: "You just draw trees in different sizes beside one another. Then you can see it is growing".

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illustration no. 1.

The example above shows that it is possible for children to produce an essential and fundamental principle of the reality by means of an object model on the basic of direct sensuous experiences.

From the abstract to the concrete

In the developmental research we use the principle of movement from the abstract to the concrete. Not in the sense that the children learn to effect an abstract concept or thought by heart. It is the other way round: Bringing the children into an practical activity, they learn general principples and they expose the core by experience.

In an project about social work the teacher first of all helps the children to examine human work in general: Through work, man influences nature, changes nature and by so doing changes himself. This abstraction can be understood through practical activity. The children observe people at work, they dramatize essential aspects of the work, by drawing, modelling and building. Through this they produce a simple model: The roadmender drives the steam roller and the policeman directs the traffic.

In order to achieve movement from the abstract to the concret, we in agreement with Ajdarova use the following principles (Ajdarova 1987):

The teacher herself has to expose and appropriate the structure and essence of the object in advance, and she herself must have ideas about how to expound this in a fundamental concept or in a model. This is of importance partly in relation to the educational guidance and partly because it indicates the direction of the children's activity.

The teacher has to choose and create methods and activities by means of which the children can examine the essence of the object.

Contrary to formal one-way-communication the children will achieve knowledge through their own experiments and research,

- activities that provide a personal and meaningful experience.

The children do not need to use the fundamental concept the teacher has developed. The children will generate new fundemantal concepts or models themselves. In relation to the project of the essence on nature, the teacher used the word "activity" to understand the nature. The children generated their own understanding and concept: "Nature is alive".

As a model represents fundamental qualities and relationships between elements whithin the research object, the children's active production of models is crucial for the development of theoretical thinkning.

Unity of process and product

5 year old children usually focus on the product of their activities, and in one way they are conscious of their activities. Purposefully they say: "We are building a hut". The attention towards the result of their actions does not prevent them from "lingering" during the proces. But usually the children's awareness of the way to the result is less developed.

In the developmental research we have experimented with different methods for developing a consciousness of why and how you achieve a particular result. In this way the children develop arbitrary and will-controlled actions. Furthermore their increasing awareness of the relationship between the process and the product will contribute to the development of the learning motive: Consciousness of ones own activity. This helps the children to master the relationship between cause and effect better, the ability to reflect. Finally we assume the children will understand better the significance of their own contribution in the achievement of common goals.

We have experimented with different methods for developing a gradual transition from goal-directed attention to the result of the actions and to direct attention to the way in which the result is achieved. Naturally play is of great importance because the children try to carry out their roles in accordance with the rules. In this way actions in play change from being mainly spontaneous and involuntary and to become more conscious, methodical and arbitrary.

Alongside play we experimented with a special kind of model: The action model or model for action.

The action model

The function of the action model is the creation of general overview. For instance an action model can be expressed in a graphic drawing of the actions the children have to to carry out to accomplish a joint task. Children often create a working drawing in connection with a new and diffucult activity.
Through this graphic model the children are able to plan, carry out and control the activities on their own. And as mentioned above this will develop independence, consciousness

of own activity and the beginnings of reflective thinking.

In order to turn the children's attention towards goal direction, we often use co-operative tasks in which the functions are divided up (L. Venger 1985). We help the children to organize the work in such a way that they manage a single function individually. The component parts result in the accomplishment of the task. At this point the children and the teacher discuss the relationship between the performance of the functions and the quality of the end product.

To be able to use models for action in this way following demands are necessary:

> The project must consist of seperate entities that make a whole when put together.
>
> Each single process must also be able to be divided into parts.
>
> The children work for several days, perhaps weeks under this division.
>
> Each single link in the joint task must be able to be personified. That is the single child's actions must be seen and evalueted as part of the whole.

Hobbyhorses for "Riding at the Ring"

In accordance with traditional practice the children take part in "Riding at the Ring" Shrovetide week. For this purpose the children use hobbyhorses, and the group of the 6-year-olds want to make these. They discuss what kind of materials they need and the working-processes necessary. Each child then draws and works out a graphic model. Often they construct a model together, but in this case the children want their own action model.

Below is a copy of Danny's model. At the top of the page looking from left we can see: A round piece of a stick, a white tennis sock with red stripes, a ball of blue wool for the mane, and last but not least cotton wool to fill up the sock. At the bottom we see the actions: From the left the round stick which will be sewn in two; the needle which threads for making the mane and the finished hobbyhorses.

Illustration no. 2.

The children's immediate interest is to saw the round stick for a hobbyhorse. But because they have to wait their turn, they found they could start somewhere else. The action model helps the children to carry out the actions independently and with effortless ease. They saw, cut and sew and look at the working drawings directing their work. They are proud of their horses and clearly express their joy.

Through the conscious use of a model for action a phase of preparation and fase of completion will slowly be developed. Through this the children will be forced to reflect, to think before they act, in other words the involuntary actions will be changed towards more conscious and arbitrary actions.

The employment of both types of model contribute to the development of self-confidence and a more stable independence. The models help the children to form a general idea of what they are going to create, why they have to carry out the actions and how they can work and complete the task. This conscious understanding of their own activity, develops a decisive educational quality: The children are not only objects for educational influence, they also act as independent thoughtful subjects.

EDUCATIONAL PRINCIPLES

On the basis of my studies I outline some educational principles for a pedagogical practice for the 5-6 year olds. A pedagogy in wich the activities are defined being neither pure play nor formal learning activities, - but a place between these.

I disagree with the the view of formal education on the 6-year-old child's stage of development. I want to create an educational practice that corresponds with the child's own activity and in conjunction with the 6-year-old child's leading activity: Play. The refused of formalism in pre-school education ought not result in a pure free upbringing and an education in which the teacher does not dare to influence the children, and take a leading role.

The above contrast in education expresses itself in the debate on "academic" or "non academic" education when children start school. A. V. Zaporezjets throws light on this discussion by referring to two ways the pre-school teacher can direct the development of the child's psyche. "One way is an acceleration of the development when you try to push the child as quickly as possible from one stage to another and suppress the kind of activities and psychological qualities, that are characteristic for the preceding stage and running a great risk of the development breaking down. The other way is, on the contrary, to develop and enrich those sides of development that are characteristic of the stage and to bring out new psychological qualities, not in defiance of, but in the light of them" (quoted from Venger 1985).

In agreement with the latter way I want to create a goal-directed education and upbringing. By doing this I reject external instruction and an exaggerated one-way-communication through language and knowledge from teacher to child. According to Vygotsky this form of education will result "in an appropriation of emty words and barren verbalism. The child has not appropriated conceptions but words he has remembered but has not learned. Consequently the child is not able to use the knowledge in a meaningful way" (Vygotsky 1962). I do not want to make education effective by pushing knowledge on to the children, by for instance asking too guided questions, or by the teacher herself presenting the result of her knowledge.

To prevent the mistaken practice mentioned above I will point out a number of principles.

Organized activities must build on the same qualities and forms of acknowledgment children develop through play.

Any kind of discover and acknowledgment takes place through the childs own activity. The activity is objectivity, it is goal-directed at an object the children and the teacher study together. The teacher helps the children to become familiar with a subject, but the children have to do their own research.

The children must have an understanding of the reason for a particular action. According to Ajdarova the children must "act as independent thoughtful subjects during the activity they are learning", and she also emphasizes that "knowledge only take root in the child's psyche when it is supported emotionally" (Ajdarova 1987).

In order to achieve this quality the teacher has to find a balance between guidance and control, and following the children's associations and ideas. The children's spontaneity must be acknowledged, even when it takes than in an apparently uninteresting direction. The teacher must guide and support the children's comprehensive development. This guidance is difficult and has to be adjusted to the specific psychological dynamics of 6-year-old children.

6-year-old children are at the stage of development where they on the one hand need to appropriate new knowledge and on the other hand have not developed learning motives. Explained in another way: The children want to learn something consciously, but they have not the capacity for goal-directed attention. This is still under development. For that reason it is important for the children to have an experience and consciousness of having acquired new knowledge and skills, and at the same time a feeling that their actions are accepted and appreciated by the teacher.

6 year-old children are not able to master regulations for their own actions independently. That means to keep the attention to the object of knowledge. But because the children want to learn, the teacher has to help the children to overcome the difficulty of controlling their action. For the children this is an unknown and unaccustomed effort, and for that reason the teacher must have patience - encourage and praise the children.

If the teacher gives too much guidance, the children will easily develop an attitude of dependence on others. This should not prevent the development of a methodical and goal-directed upbringing and teaching, but following criteria must be taken into account:

Children's development takes place through their own activities.

The teacher must organize activities based on the qualities and knowledge children develop through play.

The educational practice has to be created such that the children are really subjects in their own learning activity.

Time and the possibility for the children to play on their own as 6-year-old children still appropriates knowledge through play.

An onus on play implies the possibility of all sorts of experiences getting many sensation, - this requires time and financie to go on field trips.

The experiences have to be expressed and adapted through many types of actions, for instance play, dramatization, drawing and painting, dance, singing and music. This requier time and assistance from more adults.

The children and the adults must be able to explore and work on the topics and problems throughout the day. For example the children start playing or painting in the afternoon on the basis of experiences from the forenoon.

To carry out the activities the children need lots of time and space. Do not try to make the activities too effective, avoid pushing the children. Their acknowledgment has to be developed through their own activity and in time through their own adaptation. As a matter of principle they themselves have to search for acknowledgement.

To develop a comprehensive personality for all children requires time and resources to support the individual child.

Children's good fellowship and friendship should be developed along with other sides of the personality.

EVALUATIVE CONCLUSION

Beeing able to maintain, monitore and constantly developing the educational quality an evaluation study of "teachers as researchers" (Brostrom/Frokjaer 1991) point out the implementation of an ongoing critical action research as a very important tool. Here the teachers themselves are involved and responsible for developing the quality.

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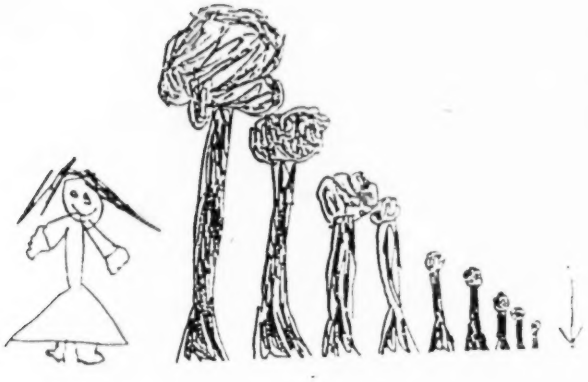

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